



# Sampling, feeding, instrumentation and automation for Process industries

INGEPROA Bulk Sampling, weighing and monitoring

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INGEPROA, Exclusive mining Agent

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Authorized Distributor



# INGEPROA Bulk Sampling, Weighing and Monitoring Solutions

Instrumentation and automation for the process industries

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# About Ingeproa Bulk Sampling, Weighing and Monitoring products



The INGEPROA Line™ of industrial in-motion weighing, inspection, monitoring and control equipment is used for process control, production monitoring and automation.

Our products are marketed worldwide to the coal and minerals mining, cement, construction, aggregates, electric utilities, chemical processing, plastics and food industries, among others.

Our bulk weighing and monitoring product line includes , conveyor belt scales, weighbelt feeders, tramp metal detectors, coal and mineral sampling systems, level indicators, conveyor safety switches and a variety of other specialty process control instruments.

## Commitment to Quality

We strive to provide competitively priced, defect-free products and services that meet our customer's requirements by the promised delivery date.

## Customer Satisfaction

We are dedicated to the highest level of customer satisfaction.

Our pledge is to work with you, the customer, to provide customized solutions to your specifications and needs.





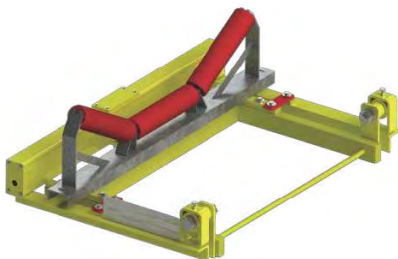
# Conveyor Belt Scale Systems

We are one of the world's largest providers of conveyor belt scales and electronic integrators. The rugged construction and leading edge designs of our belt scale systems have ensured reliable performance and provided unmatched versatility for over 60 years. All of our belt scale systems let you monitor production output and inventory, or regulate product loadout, while providing vital information for the effective management and efficient operation of your business.



## INGEPROA dynascale basic model

Provides basic rate information and totalization functions in processes involving noncritical or lower value materials with an accuracy of  $\pm 1\%$ . The Dynascales loadblock belt scale system provides vital information that allows you to effectively manage and efficiently operate your business by monitoring production output and inventory or regulating product loadout.



## INGEPROA dynascale 10-20 model

Provides basic rate information and totalization functions in processes involving noncritical or lower value materials with an accuracy of  $\pm 1\%$ . The Dynascales loadblock belt scale system provides vital information that allows you to effectively manage and efficiently operate your business by monitoring production output and inventory or regulating product loadout.

# Conveyor Belt Scale Systems



## INTEGRATOR W301

The wi301 integrator is a weight integrator for dynamic weighing systems. by integrating the mv signal from the load cells in the weighing frame and the pulse signal from the speed sensor, the wi301 integrator generates a readout for the product flow in e.g. tonnes/hour.

It is also possible to read out the belt load (kg/m), belt speed (m/s) and the daily counter or total counter (kg or ton). The integrator can also be equipped with various optional boards for e.g. communication purposes. the integrator can be used for both approved and nonapproved applications.



## SPEED BELT SENSOR W2556

The W2556 digital speed transducer is the most reliable and accurate speed transducer ever developed for use with belt weighers.

By directly connecting the transducer to the belt reversing roller or a return roller, you are guaranteed an accurate belt run reading. no wheels running over the belt, preventing problems caused by product accumulation or belt slip.

# Weightbelt Feeders

Precise feeding of process materials is often critical to maintaining product quality. A feeder that weighs accurately and reliably can reduce material waste, help maintain blend consistency and increase profits. We have over 10 years of experience designing and manufacturing weighbelt feeders. Every feeder is designed to meet the specific needs of an application. We work closely with our customers to ensure that each system meets their expectations for performance and dependability.

## INGEPROA weight feeders W-800



This weighbelt feeder's heavy duty construction provides larger pulleys and a very sturdy, rugged frame for increased accuracy in high-rate, heavy duty applications. It accommodates flow rates up to 816 metric tons (900 tons) per hour, and belt loadings up to 447 kg/m (300 lb/ft). Its endless belt design allows the belt to be changed with minimum downtime.

## INGEPROA weight feeders W-1000



This weighbelt feeder's unique cantilevered and formed channel frame design provides a strong and sturdy weigh structure and allows for quick and easy maintenance. It accommodates flow rates of approximately 0.5 metric tons (0.5 tons) per hour up to 91 metric tons (100 tons) per hour, and belt loadings of 15 kg/m (10 lb/ft) to 170 kg/m (72 lb/ft).



# Tilt and Sensors



## INGEPROA Tilt Switches and Control Units

### Now Available in a Mercury Free Version

Tilt switch probes are electro-mechanical tilt sensors designed for sensing bulk materials presence or absence at the location of installation. typical applications include high and low level detection and detection of plugged conditions in chutes. also used for detecting the conditions of bulk material on conveyor belts.

Tilt switches are made from two materials for different applications: the ss series with stainless steel body and the cb series which are made of iron casting to meet heavy working conditions. depending on the applications, can be supplied with a dedicated control unit or can be directly integrated in existing control system.

### C-39 Series - Heavy Duty Cast Iron Probe

Model	Tilt Angle	Mercury	Non-Mercury	Output
CB-39	35°	x		NC When vertical. Opens in angle.
CB-39A	20°	x		NC When vertical. Opens in angle.
CB-39NM	20°		x	NC When vertical. Opens in angle.
CB-39E	35°	x		Electronic. Must be used with Control Units.
CB-39AE	20°	x		Electronic. Must be used with Control Units.
CB-39NME	20°		x	Electronic. Must be used with Control Units.

### SS-43 Series - Stainless Steel Probe

Model	Tilt Angle	Mercury	Non-Mercury	Output
SS-43	35°	x		NC When vertical. Opens in angle.
SS-43A	20°	x		NC When vertical. Opens in angle.
SS-43NM	20°		x	NC When vertical. Opens in angle.
SS-43E	35°	x		Electronic. Must be used with Control Units.
SS-43AE	20°	x		Electronic. Must be used with Control Units.
SS-43NME	20°		x	Electronic. Must be used with Control Units.

# Tilt and Sensors



## INGEPROA Misalignment Switches

This switch is mounted on the top or bottom of conveyor stringers with its actuating arm adjusted to the outside edges of the belt. If the belt skews or misaligns, contacting the actuating arm and displacing it from its vertical position, a connection is made with one or more of the micro-switches. A 10° displacement of the actuating arm activates an alarm signal to warn of a potential shutdown, allowing the operator to make adjustments and realign the belt. A 20° displacement will activate a signal to shut down the process in order to prevent or minimize damage to the belt.



## INGEPROA Cable Pull Switch

A safety pull cable is attached to the actuating arm of the switch and terminated at fixed mounts at either end of a conveyor. Force applied to the pull cable at any position causes the actuating arm to move into a tripped-locked position and activates an alarm from one DPDT or two SPDT micro-switches, alerting equipment circuits of the stop condition. This will stay locked until manually reset by the reset lever.



# Primary Samplers



## INGEPROA SWEEP ARM Primary Sampler SWAX-7000

The Model SWAX-7000 sweep type sampling machine offers an economical, simple means to procure a representative sample directly from a main stream of material. Direct increments are obtained from in-motion, horizontal or inclined conveyors. With over 40 years of experience in engineering and manufacturing, this sampling systems are recognized worldwide as the finest available.

The Model PSS machine is ideally suited for sampling of coal, limestone, sand, crushed rock, gravel, ferrous and non-ferrous ores. Because of installation ease, the sweep type sampler is easily retrofitted to existing bulk material conveyor systems.

The sweep type sampling machine has been subjected to rigorous, in-the-field testing, teaming with an extensive research and development.

INGEPROA is the only manufacturer to implement impact stations in order to adapt the curvature of the belt to the radius of gyration of our cutter, providing a clean and representative sampling.

# Primary Samplers



## INGEPROA SLOTTED VESSEL Primary Sampler CSB-100

The slotted-vessel sampler is implemented for sampling materials at the belt head or in the downpipe. This sampling principle is based on a slotted-vessel with defined intake slot vertical to the dropping material stream that records the material stream's entire thickness at a constant speed.

The slotted-vessel sampler runs through the material stream from the waiting position with the base flap usually opened, closing this flap when the reverse position is reached

The sampler now runs through the product stream with the base flap closed again at constant speed and thus takes a representative sample.

On the usually conical vessel reaching its waiting position, the base flap is opened by means of stops and a sophisticated lever system, and the slotted-vessel emptied. The sampler's waiting position is invariably located outside the material stream, thus minimizing wear to the sampler.



# Primary Reduction Size



Production: 5 TPH  
P: 11-15 Kw  
Weight: 380 Kg

## INGEPROA Hammer Mill CS31-3SM Mining

The hammer mill consists of a series of oscillating hammers and includes a grill to achieve a and includes a grate to achieve the final product size.

The material is initially reduced in the upper the upper chamber by impact, it is further reduced by shearing as it passes shear as it passes through the breaker bar, and finally it is reduced by attrition as the hammers force the material through the grate.



Production: 25-30 TPH  
P: 125 Kw  
Weight: 3000 Kg

## INGEPROA Hammer Mill CS31/1-A

The INGEPROA CS31/1-A series hammer mills are compact grinding machines for all types of slate and clay with a maximum moisture content of 10%. The hammer mills series extends the production rates of the es series, incorporates innovations in relation to this one, either by its system of heat sources for the wet clay crushing, as by its system of hydraulic opening of the upper and lower part of the body of the machine to make the maintenance and the change of the grills easier.

The crushing of the material occurs in two phases:

1. Primary break of the incoming material by hammer speed.
2. Impacts of the material against adjustable breakers.



Production: 30-35 TPH  
P: 150 Kw  
Weight: 4820 Kg

## INGEPROA Hammer Mill CS-31/0-S

Equipped with two large flywheels that guarantee a smooth and silent operation, while stabilizing the power consumed. Depending on the model, they are equipped with two adjustable heat sources by means of armored tubular heaters located at the front or at the front and rear. This prevents the shredded material from sticking to the surfaces, thus allowing to work at full capacity with material containing a high percentage of humidity.

- High granulometry reduction
- Exclusive internal heating system facilitating cleaning

# Secondary Samplers



## INGEPROA Rotary Divider Vezin CSA-3500S

The Stand Alone Rotating Sample Divider is designed to split out a representative portion of a sample with a high degree of dividing accuracy. The main features include accurate representative split of any proportion (from 2% - 50%), as well as sealed bearings.

The feed sample is fed at a controlled rate as a falling stream that is divided either into one part or into equal segments by the action of a "circle" of segmental buckets being rotated beneath the stream.

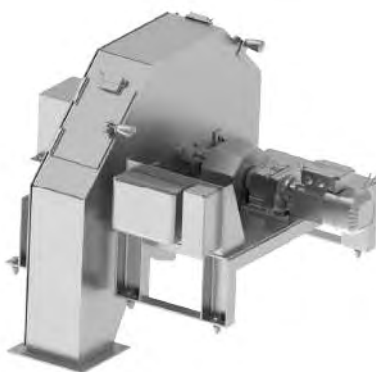
The unit operates in accordance with internationally recognised sampling protocols, ASTM, GOST, ISO.



## INGEPROA "C" Cutter CSCK-2000

Once the cutter clears the material stream, the sampling equipment stops the cutter on the opposite side of the material stream. The next increment is collected by moving the cutter again in the direction of the first stop position.

The cutter will then pass through the material flow, collect the sample increment, stop again at the original stop position and empty the sample increment into a discharge hopper. The material is then collected for off-line use or passed to the next piece of equipment in the sampling system. It is also important to note that some bottom discharge sampling equipment may have a sample discharge point on both sides of the material flow. In this case, the operation would be as described with the bypass type cutter.



## INGEPROA Sweep Arm SWAX-7000-S

The Model SWAX-7000-S sweep type sampling machine offers an economical, simple means to procure a representative sample directly from a main stream of material. Direct increments are obtained from in-motion, horizontal or inclined conveyors. With over 40 years of experience in engineering and manufacturing, this sampling systems are recognized worldwide as the finest available.

The Model SSS machine is ideally suited for sampling of coal, limestone, sand, crushed rock, gravel, ferrous and non-ferrous ores, because of installation easy, the sweep type sampler is easily retrofitted to existing bulk material conveyor systems. The Model SSS can be used as a stand-alone sampling device to extract a cross belt cut to a sample container or as a primary (first stage cutter) in a multi-stage mechanical sampling system.



# Rotary Collectors



## INGEPROA Rotary Collector RSCO-4

Should samples be collected only at protracted time intervals, we offer the possibility of keeping them in so-called sample collectors of the most varying sizes until they are collected.

The sample bottles are placed in a roundabout and are turned to the next empty bottle when filled.

System is equipped with a door security Switch, canister detector, and completely automated equipment. High performance for secure moisture into the canisters. Completely motorized system Up to 4, 30 Liters Canisters.



## INGEPROA Rotary Collector RSCO-6-8

Should samples be collected only at protracted time intervals, we offer the possibility of keeping them in so-called sample collectors of the most varying sizes until they are collected.

The sample bottles are placed in a roundabout and are turned to the next empty bottle when filled.

System is equipped with a door security Switch, canister detector, and completely automated equipment. High performance for secure moisture into the canisters. Completely motorized system Up to 6-8, 30 Liters Canisters.



## INGEPROA Unit Collector AM-40

Manufactured in stainless steel.

Control of Canister presence is included, as well as door opening security micro.

Security padlock included for the opening delimitation. The volume of the bottle can be between 0.5 to 30 liters, modifying the container to the desired size.

Totally watertight system for the analysis of moisture in sampled samples.

Valid for any mineral, fertilizer, or bulk products. Up to 5-33 L Canister.

# Primary and Reject conveyors belt



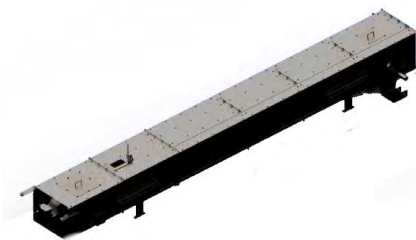
## INGEPROA Primary belt Feeder PBF

Among its different products, INGEPROA offers a wide range of conveyor belts designed dimensioned according to the customer's needs.

PBF models provide a constant product rate in any of their versions. PBFs are normally used for the reception of material from a primary sampler, adjusting, depending on its speed, the desired layer height for the use of a secondary.

A frequency inverter is included for adjustment, as well as a complete fairing to maintain optimum product conditions during the stroke. Its sealing makes it suitable for the maintenance of moisture in products to be analyzed at a later date.

PBF feeder belt conveyors can have a secondary implemented, ensuring a perfect fit and being the most demanded conveyor in sampling systems around the world.



## INGEPROA Reject Belt Conveyor RBC

Among its different products, INGEPROA offers a wide range of designed conveyor belts sized according to customer needs.

The RBC models provide a constant speed in any of their versions. RBCs are normally used for the evacuation of waste material from sampling until recirculation to the main line.

They are normally high-speed conveyor belts, since their main function is to clean the line of non-sampled product.

You can optionally have frequency inverters to adapt them to the sampling speeds.

Modular, reliable and robust construction, the INGEPROA RBS model makes it ideal for the evacuation of material.



# Metal detectors and Overbands

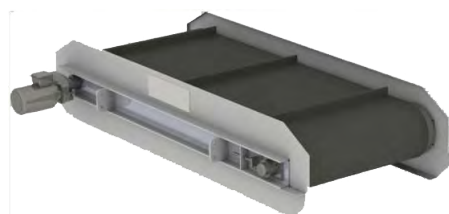


## INGEPROA Metal detector GRS

This tramp metal detector minimizes lost production by providing an economical and reliable means to protect expensive crushers, conveyors and other process equipment from damage by tramp metal.

It can detect all types of metallic scrap, including bucket teeth, manganese steel mantles, bore crowns, bar scrap chains, tools and more. Because the Metal detector is insensitive to materials with high magnetic permeability and electrical conductivity, it can be used in applications where conventional metal detectors produce an unacceptable false alarm rate.

It is designed especially for belt conveyors moving coal, iron pellets, minerals, aggregates and other bulk materials.

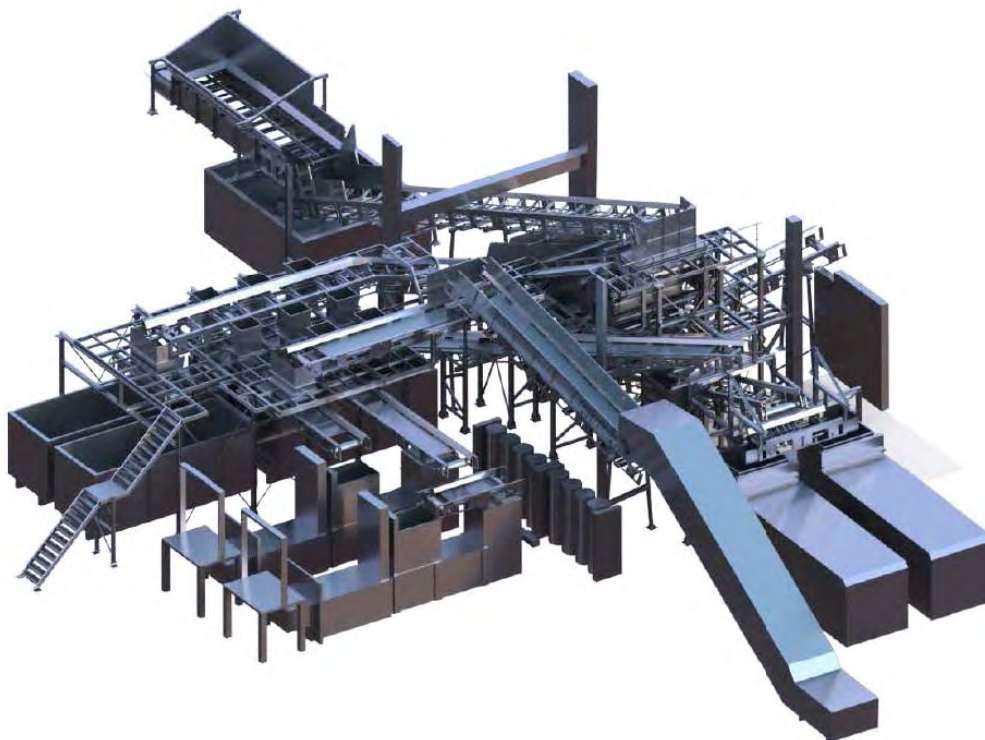


## INGEPROA Permanent magnet and Overbands GRS

They are permanent magnet magnetic separators, whose magnetization lasts for life and does not require electrical power. They lack maintenance, you just have to take care of their periodic cleaning, eliminating the captured iron because if they accumulate in excess they can "short-circuit" the magnetic force. They are installed suspended above the conveyor belt parallel to it and maintaining the recommended distance for each of them according to their construction characteristics. We have the ATEX ZONE 22 AND ZONE 21 CERTIFICATION.

It is a permanent magnet, to which a conveyor belt structure has been attached, making the magnet self-cleaning, very practical in installations where there is a large presence of ferrous metals. In this way we ensure that the permanent magnet is always clean of ferrous contamination. The Overband is supplied complete, with a gear motor or hydraulic motor, depending on the existing feed and the conveyor belt, provided with blocks for the evacuation of the separated irons.

# INGEPROA Projects

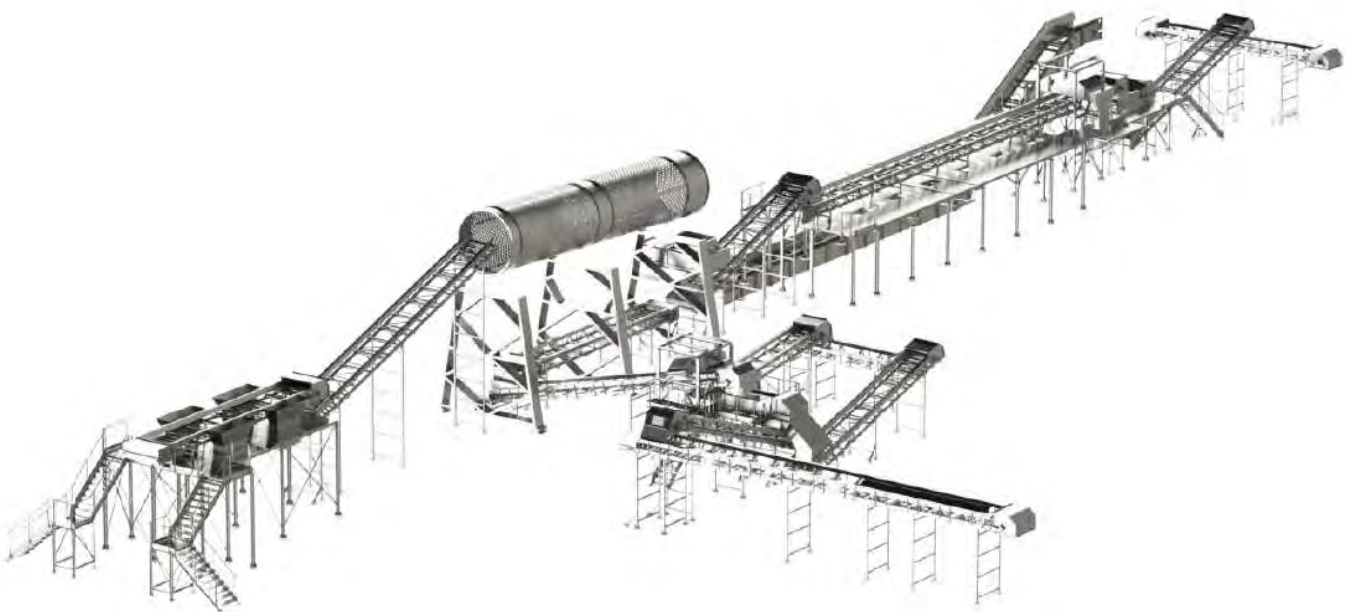
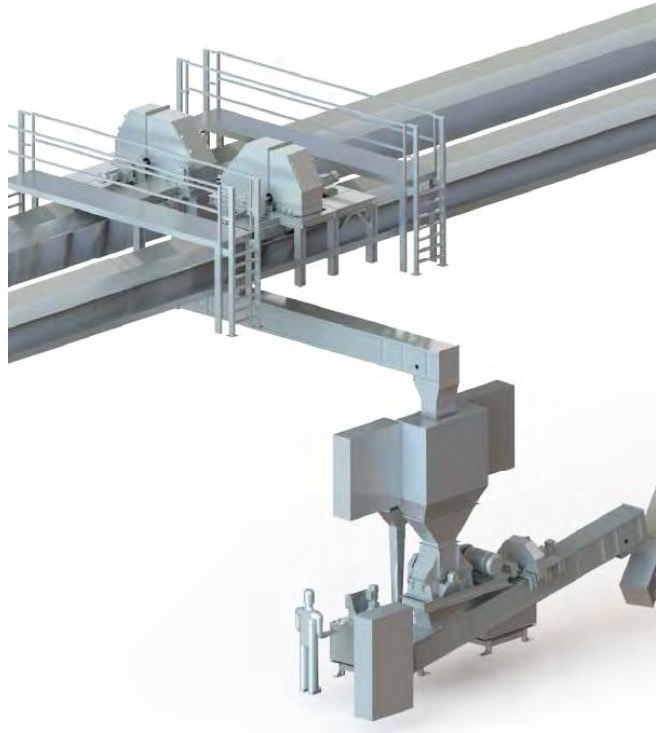




# INGEPROA Projects



# INGEPROA Projects



# Technical Support and Global Service

We offer a complete array of services designed to help you gain a competitive advantage. We provide premium, customized, around-the-clock support with guaranteed response time at a price that meets your budget. We appreciate your business and will help you obtain the maximum value of your technology investment.

We provide the training you need to get the most from our Ingeproa products and services. We offer certification training on our products, as well as custom training tailored to your operation's specific needs. We can also help you enhance your maintenance, troubleshooting and repair programs.

We are committed to developing new technologies and creating top-of-the-line parts, accessories and consumables that enable you to extend the capability of your products, ensure that they keep pace with advancing technology, and achieve the results you require. We can also retrofit your aging equipment to enhance its performance and functionality, eliminating the need to retrain personnel on new equipment.

## Service Agreement

Invest in peace of mind with a Ingeproa service agreement. Ensure minimum downtime, with known costs and priority response times, all tailored to your individual requirements.

### Reduced Downtime

Dramatically reduce production downtime and unnecessary product giveaway through regular preventive maintenance and pre-scheduled calibration visits.

### Flexible Coverage

We understand that every customer has their own unique requirements. That is why we give a choice of service agreements, ranging from quick, convenient telephone support to unlimited on-site, round-the-clock coverage.

### Priority Response

Our contract customers receive priority response over non-contract customers.

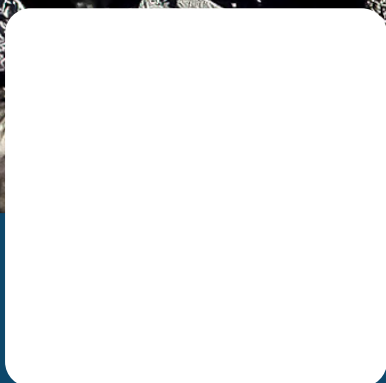
### Parts

Your system is a sophisticated, precision instrument. To keep it operating at maximum productivity, we recommend that you only use original manufacturers certified parts. All our parts are guaranteed to perform to our instruments' rigorous design specifications.

### Predictable Costs

A service agreement provides on-site service for a specific instrument with the highest levels of response, at predictable costs allowing you to support your annual maintenance expenditure.





Our Distributor in your zone

 INGEPROA

thermo  
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INGEPROA, Exclusive mining Agent

Our bulk weighing and monitoring product line is headquartered at our facility in suburban Zaragoza and sold and serviced by ourselves or our distributors.

Find out more at [ingeproa.com](http://ingeproa.com)

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